

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
19 January 2006 (19.01.2006)

PCT

(10) International Publication Number  
**WO 2006/005983 A2**

(51) International Patent Classification:  
**F41B 5/00 (2006.01)**

(21) International Application Number:  
**PCT/IB2004/004465**

(22) International Filing Date:  
22 November 2004 (22.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/524,883 26 November 2003 (26.11.2003) US

(71) Applicant and

(72) Inventor: **HARDIN, Montgomery, G.B.** [GB/GB]; 29  
Dale Lodge Road, Sunningdale, Ascot, Berkshire, SL5  
OLY (GB).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,  
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: **MATERIAL FOR PROVIDING IMPACT PROTECTION**

(57) Abstract: A material and method for production of ballistic armor. One or more absorbing layers are inserted between layers of woven cloth made of high strength fibers. Mechanical energy absorbing layers are of two types, either a large number of small objects in loose contact with one another which will dissipate energy by moving transversely to the direction of impact, embedded in a matrix along with randomly oriented high strength fibers, or a large number of small objects in a matrix along with parallel oriented high strength fibers. A method for production of such a layered device is also taught. The material may be used in body armor including vests and helmets as well as applied to construction of shields and armored vehicles.



**WO 2006/005983 A2**